

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
The 4.9 GHz Band Transferred from)	WT Docket No. 00-32
Federal Government Use)	
)	
)	
To: The Commission)	

**FURTHER COMMENTS OF THE
NATIONAL PUBLIC SAFETY TELECOMMUNICATIONS COUNCIL
REGARDING ITS PETITION FOR RECONSIDERATION**

The National Public Safety Telecommunications Council (“NPSTC”) hereby respectfully submits the following Further Comments regarding its Petition for Reconsideration in response to the Commission’s *Memorandum Opinion and Order and Third Report and Order*, FCC 03-99 (released May 2, 2003) (“*Report and Order*”), in the above-captioned proceeding.¹

On August 25, 2003, Motorola, Inc (Motorola) filed a request for extension of time to file oppositions to the NPSTC Reconsideration Petition, asking that the initial date set for filing of oppositions to the Petition for Reconsideration filed by NPSTC be extended by thirty days, from September 2, 2003 to October 2, 2003 and replies to oppositions extended to October 14, 2003, allowing for further industry-public safety efforts to reach a compromise position. In its grant of the extension of time for filing comments, the Commission stated it believed that “significant public interest benefits could be realized by allowing the public safety community and interested

¹ Public notice of the NPSTC Reconsideration Petition, filed in response to the Commission's *Memorandum Opinion and Order and Third Report and Order* in the above-captioned proceeding, was published in the Federal Register on August 18, 2003.

equipment vendors to continue ongoing discussions regarding deployment and development of 4.9 GHz band technologies in an effort to perhaps reach a consensus position.²” It is the intention of these Further Comments to highlight the progress of those discussions.

With over 74,000 public safety organizations in the United States, it is critical to have a resource and an advocate for public safety telecommunications. That is the primary role of the National Public Safety Telecommunications Council. NPSTC is a federation of public safety associations that encourage and facilitate, through a collective voice, the implementation of Public Safety Wireless Advisory Committee (PSWAC) and 700 MHz Public Safety National Coordination Committee (NCC) recommendations. NPSTC explores emerging public safety telecommunications issues and technologies, and develops recommendations to appropriate governmental bodies to support the broad goals of promoting public safety telecommunications worldwide. Finally, NPSTC serves as a standing forum for the exchange of ideas and information regarding public safety telecommunications

Since our initial Reconsideration filing, NPSTC has had continuing discussions on related issues with Motorola and with Cisco Systems, Inc.³ regarding the emissions masks and allowing standards-based equipment within the band. These discussions have been cordial and very beneficial, reaching consensus on all but one issue.

We are in agreement with the following issues raised in the original NPSTC Petition:

- a. The Commission should adopt the DSRC-A mask (equivalent to IEEE 802.11a) and the DSRC-C masks for use in the 4.9 GHz public safety band.

² See *Order Extending Time for Filing of Comments*, DA 03-2750, adopted August 27, 2003.

³ See *Comments of Cisco Systems, Inc* filed August 5, 2003.

- b. The Commission should embrace a standards process as a further activity within this proceeding that will lead to the adoption of an ANSI-recognized standard within a period of 18-24 months. To further this effort, NPSTC and Motorola will present a proposal to the Private Radio Section of the Telecommunications Industry Association (TIA) at its October 2003 meeting, asking TIA to assemble appropriate portions of existing IEEE and related standards into a comprehensive suite to meet public safety's specific broadband needs in the 4.9 GHz band. This suite will then be brought to the Commission as a recommendation for a mandatory standard for the 4.9 GHz band, thus promoting maximum coordinated use of the spectrum and supporting interoperability. Because of its ongoing work with Project 25 and the FCC's National Coordination Committee, TIA is particularly familiar with the unique requirements of public safety communications, having insight that is not present within other Standards Definition Organizations operating under the ANSI umbrella. By assembling existing standards into a specific suite for public safety broadband, the time required for independent standards development is eliminated.
- c. The Commission should adopt the same Regional Planning rules for the 4.9 GHz band as they implemented for the 700 MHz public safety band, with the exception that licensees in the 4.9 GHz band be permitted to implement systems prior to adoption of their regional plan subject to the stipulation that operations be brought into compliance with their regional plan once it is adopted.

Although these discussions have been extremely beneficial in reaching the above agreements, we have unfortunately come to an impasse with regard to 4.9 GHz implementation and public safety broadband market product availability in one critical area, that being the maximum transmitter output power level at which the emission mask transitions from the DSRC-A (equivalent to the IEEE 802.11a) mask to the DSRC-C mask. Our discussions continue in the hope of reaching general consensus on this remaining point.

In broadband public safety implementations, we seek an environment that includes multiple manufacturers creating products and applications that benefit the public safety community. Marketplace driven cost and technology are critical to the initial and ongoing deployment of equipment in this new band. We feel it is detrimental to both the public safety community and to the Commission's desire for an interoperable environment between agencies, including critical infrastructure, to reduce the marketplace and the availability of products by implementing 4.9 GHz rules that require significant change to mass produced products, changes that many chipset manufacturers will find not cost effective for the small public safety market.

NPSTC's position is that the IEEE-802 industry-supported DSRC-A (standard IEEE 802.11a) mask be applied for power levels of 20 dbm or less, such that very little equipment modification would be necessary, giving more manufacturers an incentive to make equipment available within the band. At transmitter output power levels exceeding 20 dBm, the more stringent DSRC-C mask would be applied in order to provide additional adjacent channel and Out Of Band Emission (OOBE) protection. This would allow for use of IEEE 802.11a-based equipment (worldwide) and 802.11j-based equipment (built for the Japanese market) for lower than 20 dBm transmitter output power and DSRC-C and 802.11e equipment at levels higher than 20 dBm. Motorola believes that the transmitter power output level at which the masks transition to tighter specifications would be better set within the 0-10 dBm range.

Based upon our detailed analyses of operational scenarios, we feel that 20 dBm is a reasonable point to tighten the mask, with the underlying issue being one of adjacent channel separation. We feel strongly that a 802.11a/j based minimum standard will allow minimum adjacent channel protection to users who can best determine the protection level suited for their

particular application. NPSTC wants the public safety community to have a choice in the products and applications they utilize with this new allocation.

By requiring all licensees to utilize an emission mask that requires extensive modifications by the manufacturers to conform to the Commission's rules, we feel the public safety community will be deprived of the choices they believe are most appropriate for their use in the band. Setting the maximum transmit power output within the range of 0-10 dBm would eliminate most existing US and Japanese IEEE 802.11a standards-based equipment, systems, and designs, as well as equipment designed for the proposed IEEE 802.11j standards serving the Japanese market that operates at 4.9 GHz. These lower limits make it undesirable to transition technologies and products to the US 4.9 GHz band. It is particularly important that US and Japanese regulatory requirements permit equipment to be produced and sold in both markets without undo restrictions.

Furthermore, it is NPSTC's belief that most broadband equipment introduced in the 4.9 GHz band will be able to handle both 4.9 GHz, and the 5 GHz bands (including the new U-NII allocations) in order to be applicable in the Japanese market, providing public safety with significant additional capacity, while leveraging into the U-NII market as well. Public safety can not tolerate a niche market, and we want to benefit from the research and innovation that is going into the evolution of 802.11 (and 802.16). It is critical to align this market with broader commercial markets to introduce competition, and foster technological innovation.

Finally, it is important that public safety agencies be able to easily interface to private and corporate security and related systems operating in the adjacent 5 GHz U-NII bands from a single public safety terminal. Systems are operational today that allow responding police

officers to view, through a wireless broadband U-NII connection, a developing incident. Banks are installing equipment to feed their internal camera outputs to responding police officers once a robbery alarm has been tripped⁴ and corporate facilities are providing similar interfaces to internal surveillance systems to assist public safety first responders. The terminals used by these officers must provide reliable access to both 4.9 GHz public safety and 5 GHz public networks; it is simply impossible for officers to carry separate devices for both when they are outside of their vehicles.

Motorola has suggested that they will be able to leverage all the 802.11a chip sets by adding additional filtering, and turning the symbol rate down to reduce the occupied OFDM bandwidth. Although a valid albeit spectrally inefficient approach, NPSTC believes, from discussions with chipset manufacturers, that these changes will be detrimental as they could require changes to the base 802.11a chipset that the mass manufacturing community may feel is not cost effective with regard to their individual business plans.

NPSTC stresses the need to minimize the amount of effort that IEEE 802.11a/j and DSRC manufacturers/vendors will need to make to offer 4.9 GHz equipment. The more changes that are necessary, the smaller the list of equipment manufacturers will be for the 4.9 GHz band. Our preliminary discussions with the vendor community have led NPSTC to believe that these changes will ultimately limit entrance into the 4.9 GHz US market.

⁴ For example, the Seal Beach (CA) Police Department, banks, and corporate facilities have partnered with Cisco Systems to provide live video of developing incidents to responding officers. See http://www.cisco.com/warp/public/cc/pd/witc/ao350ap/profiles/sealb_cp.htm

CONCLUSIONS

Therefore we urge the Commission to consider adopting within its Rules for the 4.9 GHz band those three items listed above that agree with the position of NPSTC as stated in its original Petition for Reconsideration. We further urge the Commission to allow standard DSRC-A (equivalent to 802.11a) emissions at transmitter output power levels of 20 dBm or less, and the DSRC-C mask for transmitter output power levels greater than 20 dBm.

Marketplace driven cost and technology are critical to the development of this market, providing the competitive environment public safety needs to meet its needs in a cost effective manner, while at the same time leveraging the benefits of an adjacent market several orders of magnitude larger than the public safety market.

NPSTC is continuing to work with Motorola and chipset manufacturers to resolve the outstanding transmitter power limit issue, and will provide comments to the Commission throughout this Reconsideration process as our deliberations proceed.

Respectfully submitted,

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